

Notice of Allowability

Application No.

10/780,171

Examiner

Alexander Sofocleous

Applicant(s)

LIN ET AL.

Art Unit

2824

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment of 1/30/2006.
2. ☒ The allowed claim(s) is/are 10-14 and 17-22, 24.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).


* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 2/09/2006.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


Tuan T. Nguyen 2/16/06

DETAILED ACTION

1. This action is responsive to the following communication: the Amendment of January 30, 2006.
2. Claims 10-14 and 17-22, 24 are pending in the case. Claims 1-9, 16, and 25 are cancelled. Claim 18 is currently amended. Claims 10, 17, and 18 are independent claims.

EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Agent Wing Mok (Reg. No. 56237) on February 9, 2006 at 1:15PM EST.

Amend Claim 18 to read as follows:

--18. An MRAM memory array comprising:
a plurality of first and second conductive lines;
a plurality of first and second diodes, wherein each of the first diodes comprising a cathode and an anode that couples to a corresponding second conductive line and each of the second diodes comprising an anode and a cathode that couples to a corresponding first conductive line; and

a plurality of magnetic tunnel junction memories each positioned where one of the first conductive lines crosses one of the second conductive lines, wherein each of the plurality of magnetic tunnel junction memories is connected between a first diode at the corresponding second conductive lines and a second diode at the corresponding first conductive line--.

Claim 20, line 2, change "switches" to --diodes--.

Cancel claim 23.

Specification

4. The proposed specification corrections (paragraph 0021) received on January 30, 2006 are approved by Examiner.

Drawings

5. The proposed drawings corrections (Fig. 1A, 1B, 1C, 2A, 2B, and 3) received on January 30, 2006 are approved by Examiner.

Response to Arguments

6. Applicant's arguments filed January 30, 2006 with respect to claims 10-14 and claims 17-24 have been fully considered and are persuasive. The rejection of claims 10-14 and claims 17-24 has been withdrawn.

Allowable Subject Matter

7. **Claims 10-14, and 17-22, and 24 allowed.**

8. The following is an examiner's statement of reasons for allowance:

With respect to independent claim 10, there is no teaching or suggestion in prior art to an MRAM memory array with first diodes, each first diode comprising a cathode and an anode coupled to a corresponding bit line; second diodes, each second diode comprising an anode and a cathode coupled to a corresponding word line; magnetic tunnel junction memories; each MTJ memory being connected between a first diode at a corresponding bit line and a second diode at a corresponding word line.

With respect to independent claim 17, there is no teaching or suggestion in prior art to an MRAM memory array with a first diode having a first cathode and first anode coupled to the first bit line and a third diode having a third anode and a third cathode coupled to the first word line; and a first magnetic tunnel junction memory connected between the first cathode and the third anode.

With respect to independent claim 18, there is no teaching or suggestion in prior art to an MRAM memory array with first diodes, each first diode comprising a cathode and an anode coupled to a corresponding second conductive line; second diodes, each second diode comprising an anode and a cathode coupled to a corresponding first conductive line; magnetic tunnel junction memories; each MTJ memory being connected between a first diode at a corresponding second conductive line and a second diode at a corresponding first conductive line.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant asserts, "None of Tran's diodes comprises an anode that is coupled to a corresponding bit line" (Applicant's arguments page 14, lines 6-7). It is noted that Tran discloses, "The anodes of the diodes 22 connected to the selected bit line 16" (Tran column 4, lines 3-4). However, Tran does not show connecting one set of diodes to the bit lines and connecting a different set of diodes to the word lines.

When responding to this office action, applicants are advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist the examiner in locating appropriate paragraphs.

A shortened statutory period for response to this action is set to expire three months and zero days from the date of this letter. Failure to respond within the period for response will cause this application to become abandoned (see MPEP 710.02(b)).

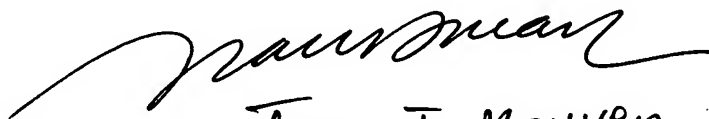
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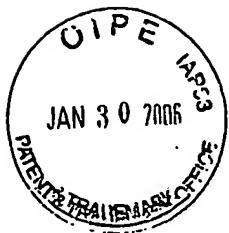
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Sofocleous whose telephone number is 571-272-0635. The examiner can normally be reached on 7:00am - 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on 571-272-1869. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AGS


Tuan T. Nguyen
2/16/06



REPLACEMENT SHEET

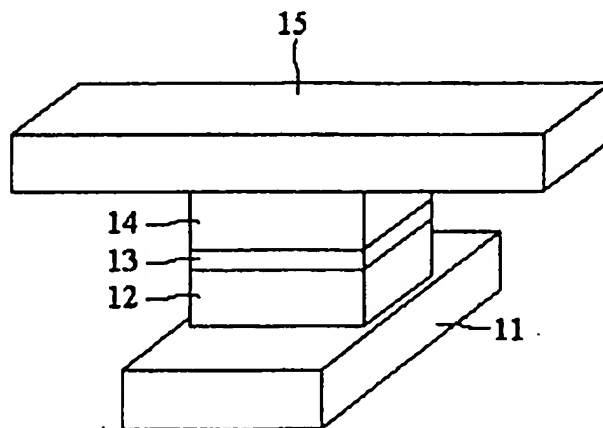


FIG. 1A
(PRIOR ART)

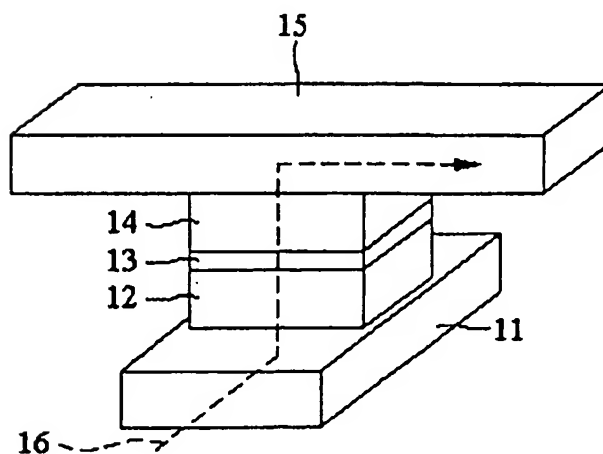


FIG. 1B
(PRIOR ART)

APPROVED
2-8-2006
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